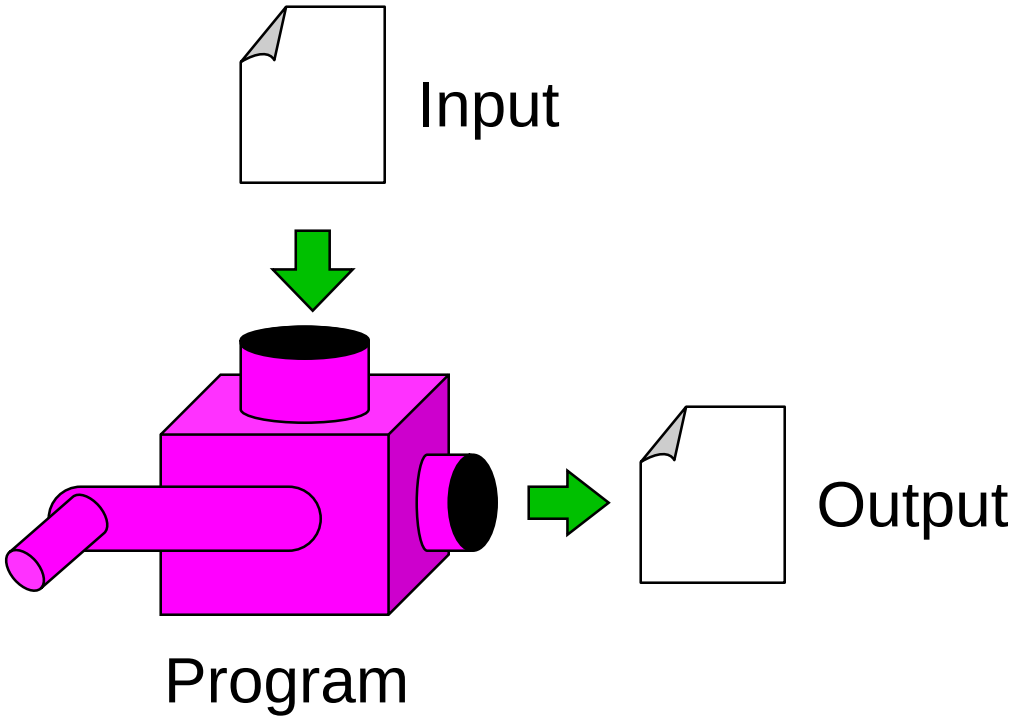
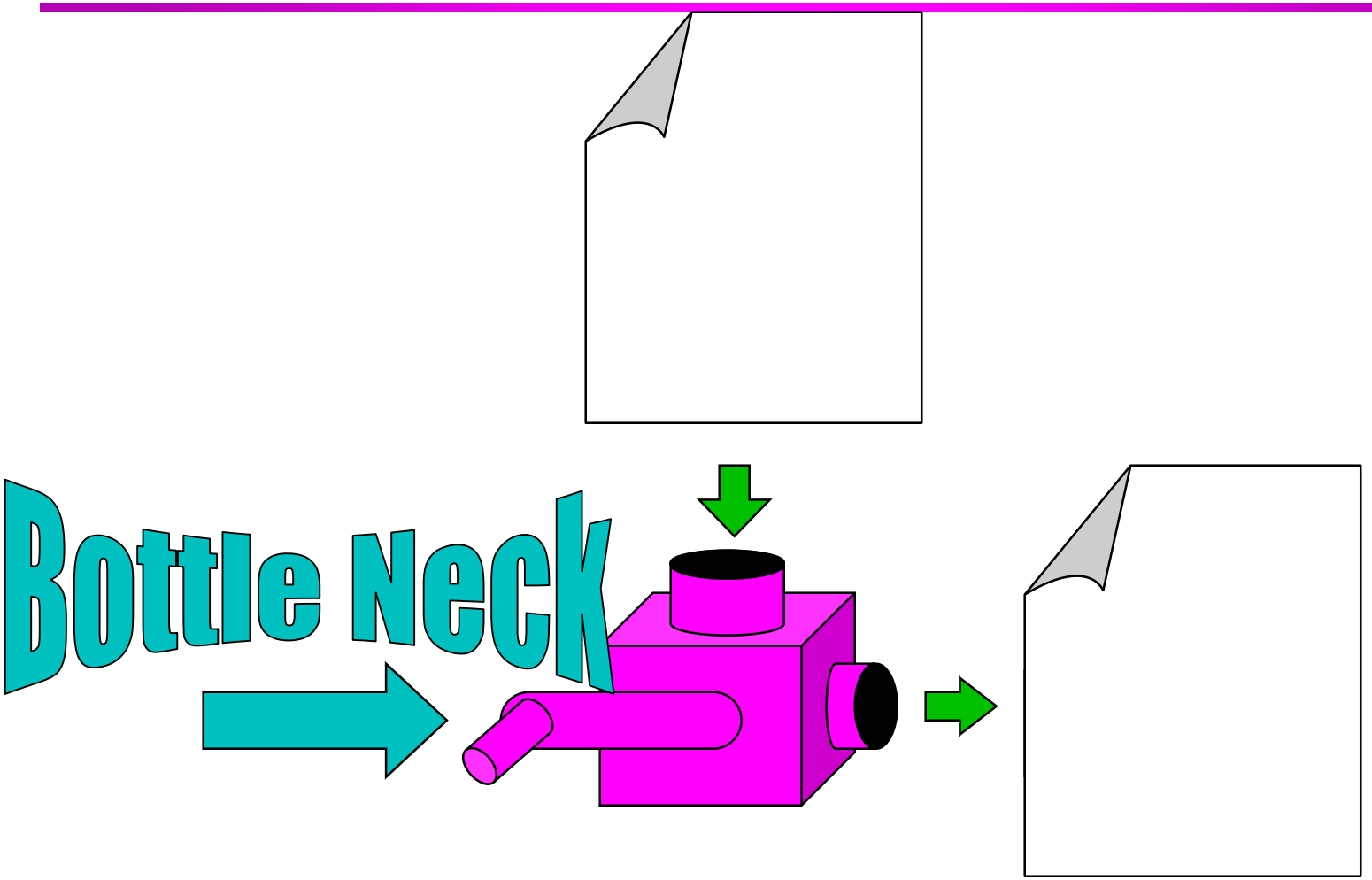
A Pictorial Introduction to Components in Scientific Computing

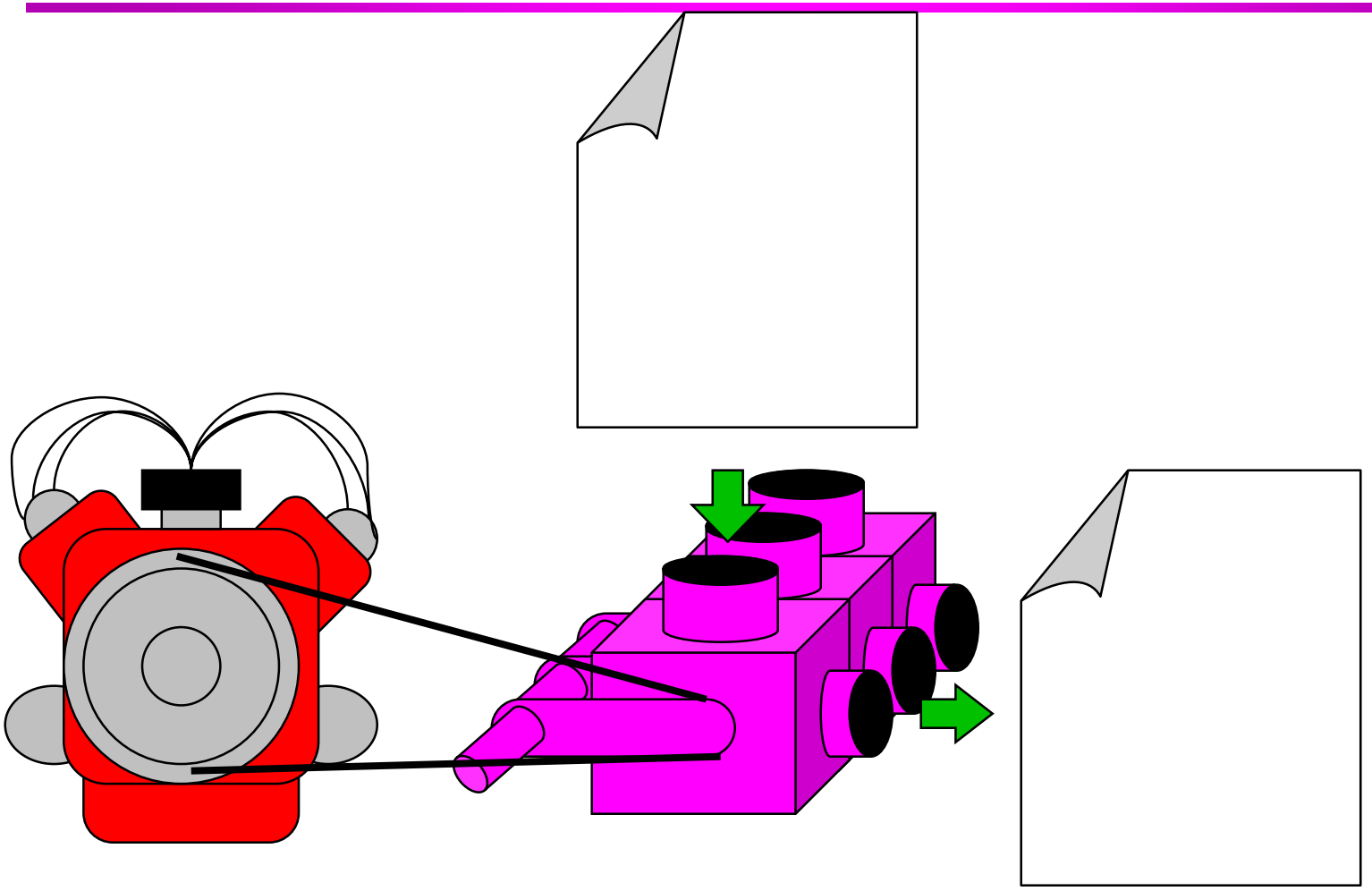
Once upon a time...



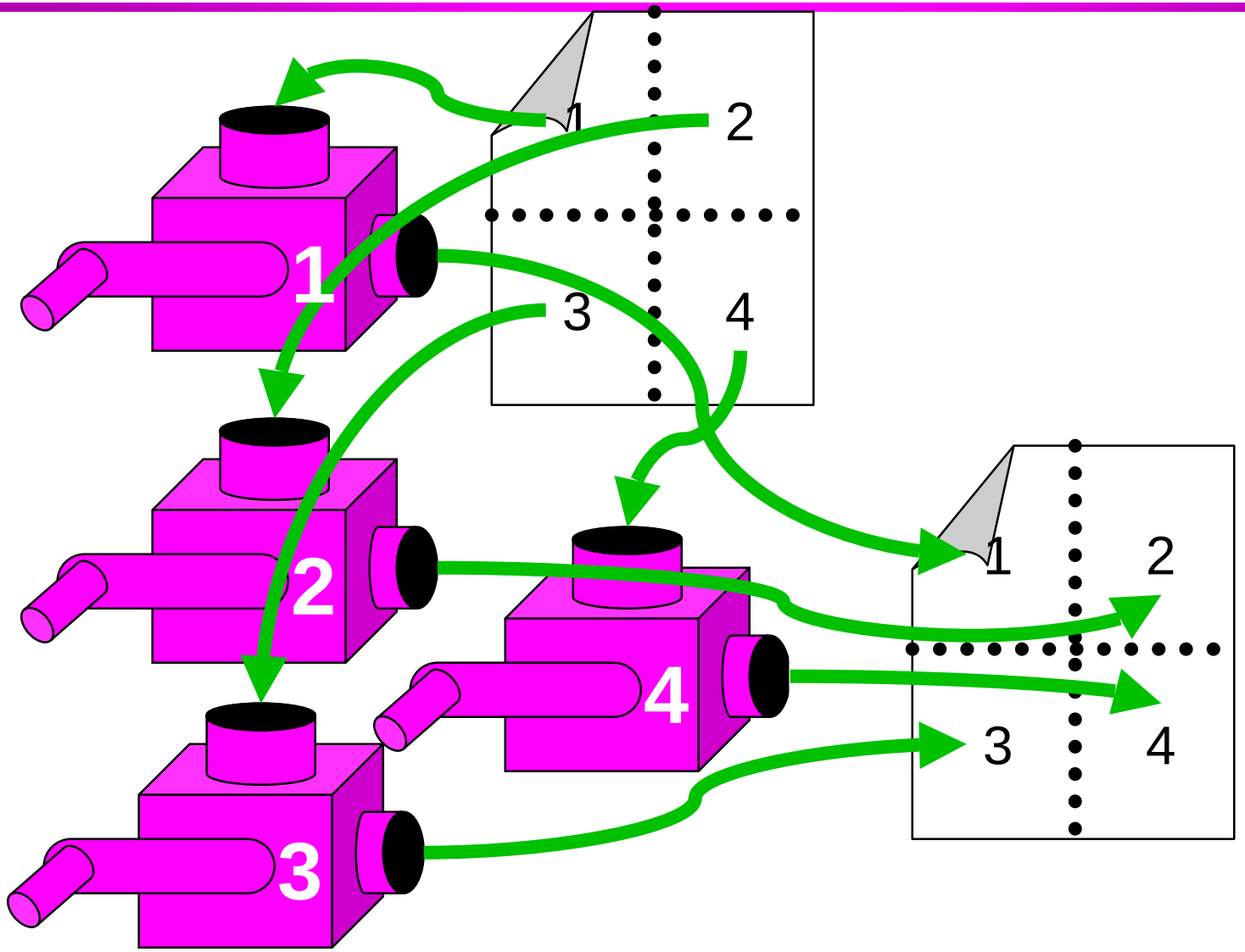
As Scientific Computing grew...



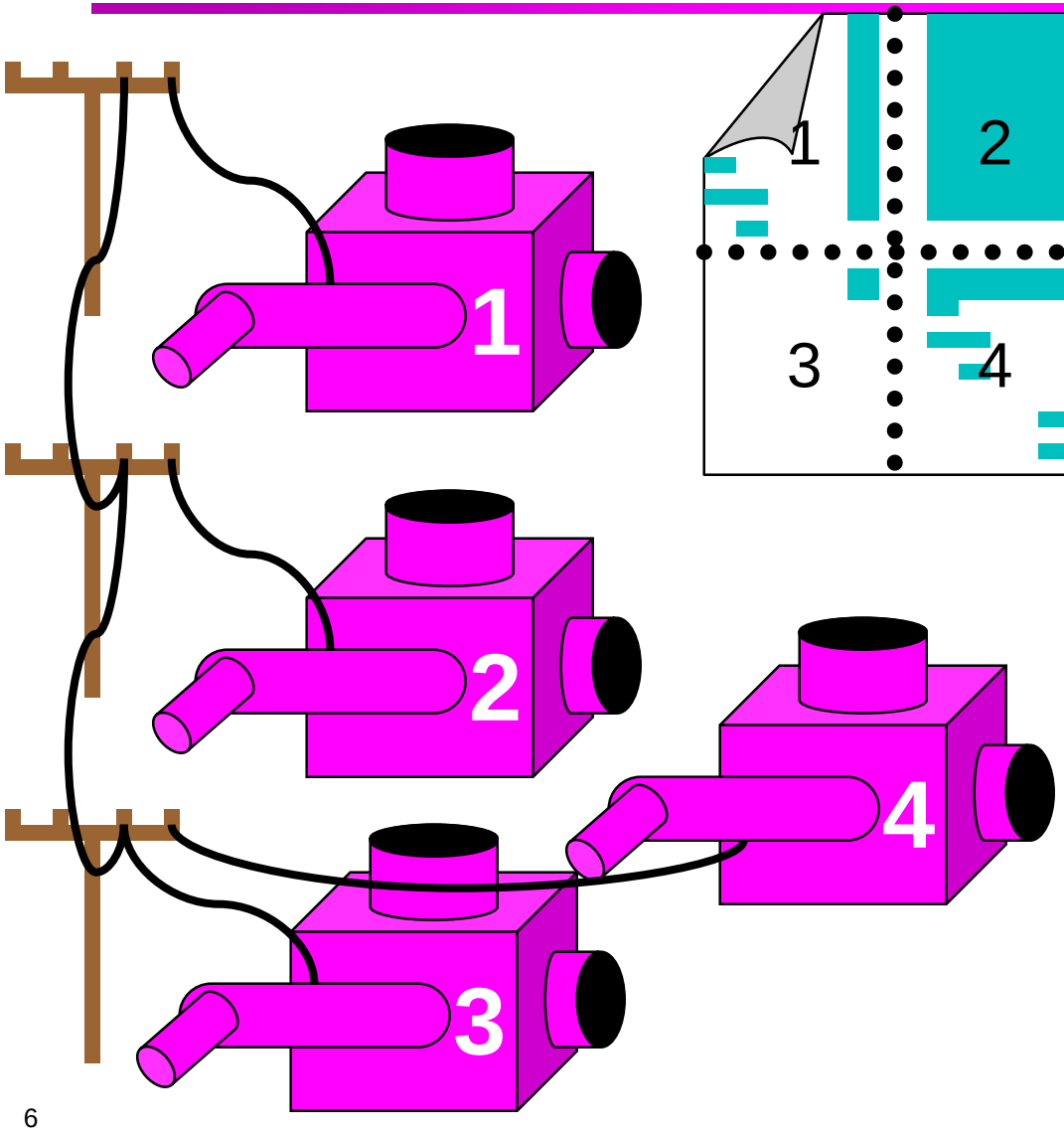
Tried to ease the bottle neck

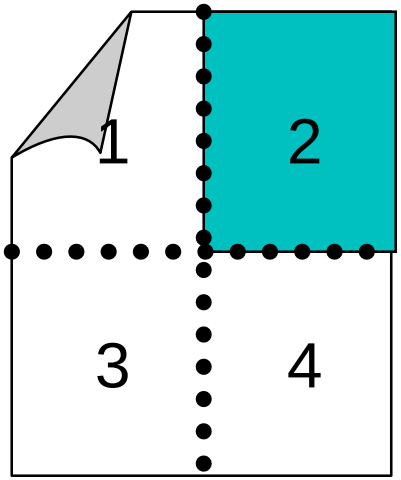


SPMD was born.

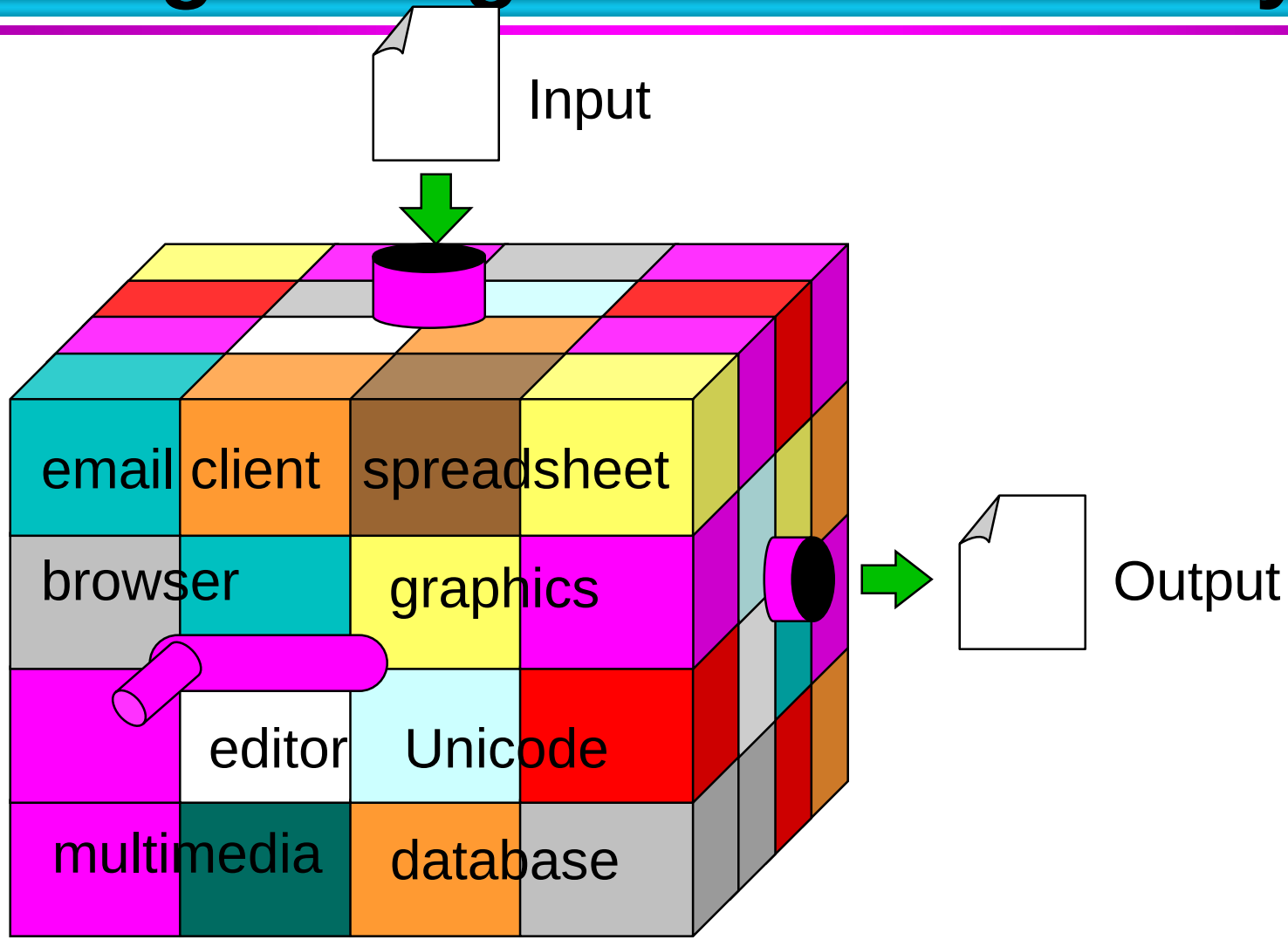


SPMD worked.

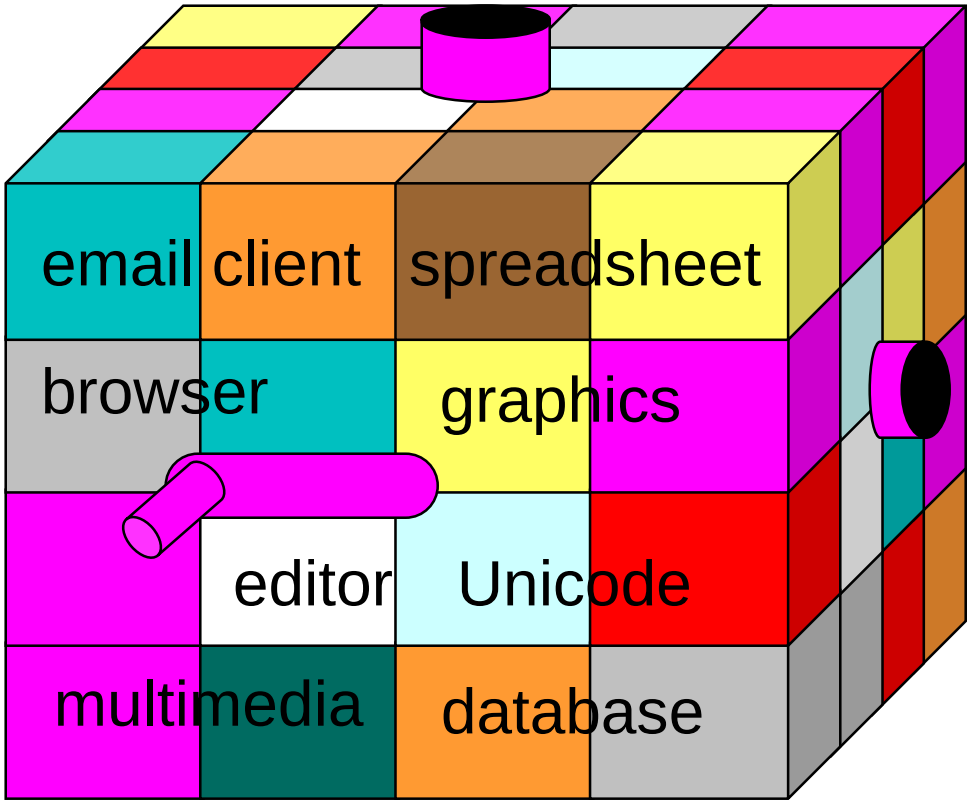




Meanwhile, corporate computing was growing in a different way

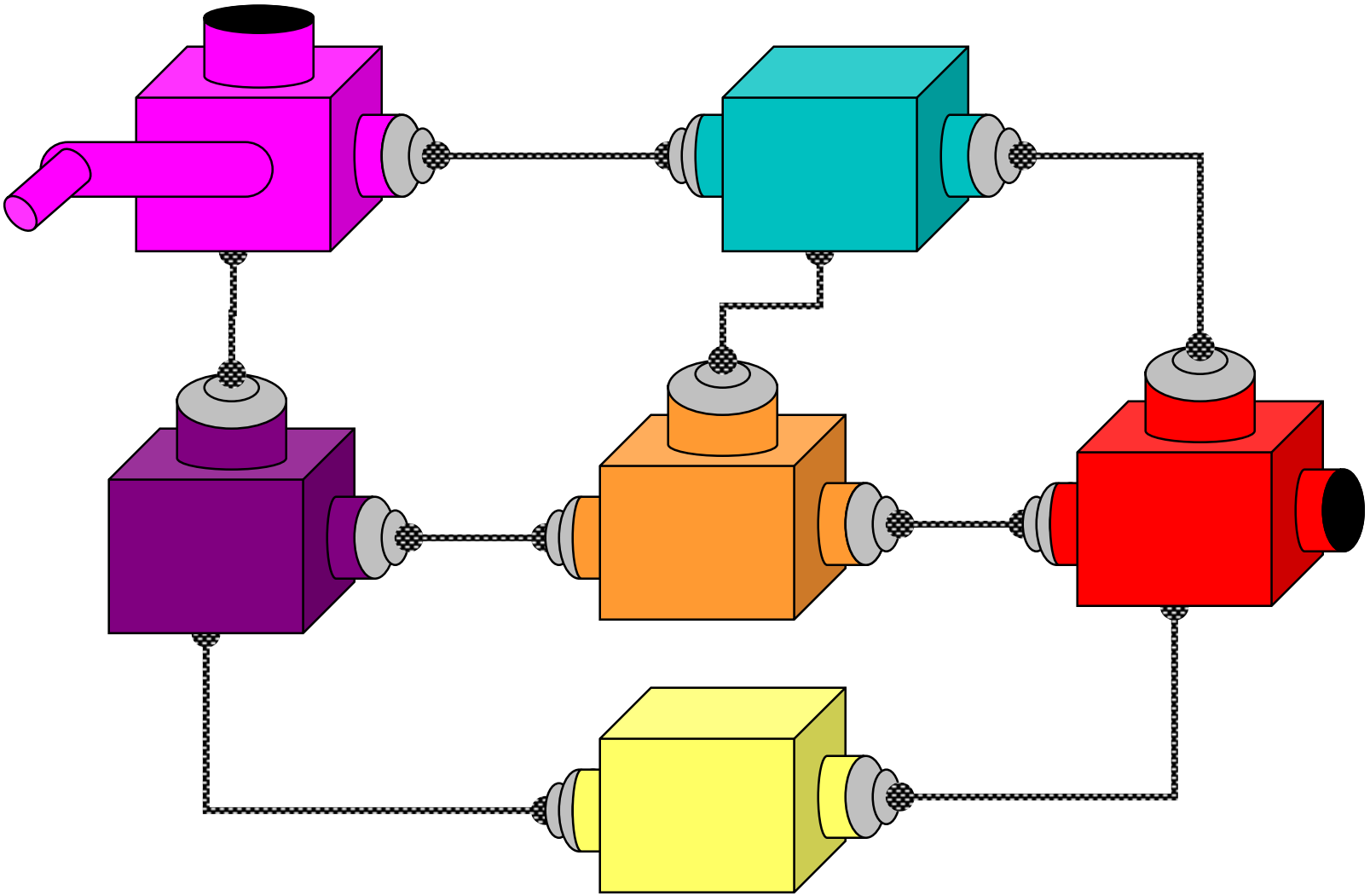


This created a whole new set of problems → complexity

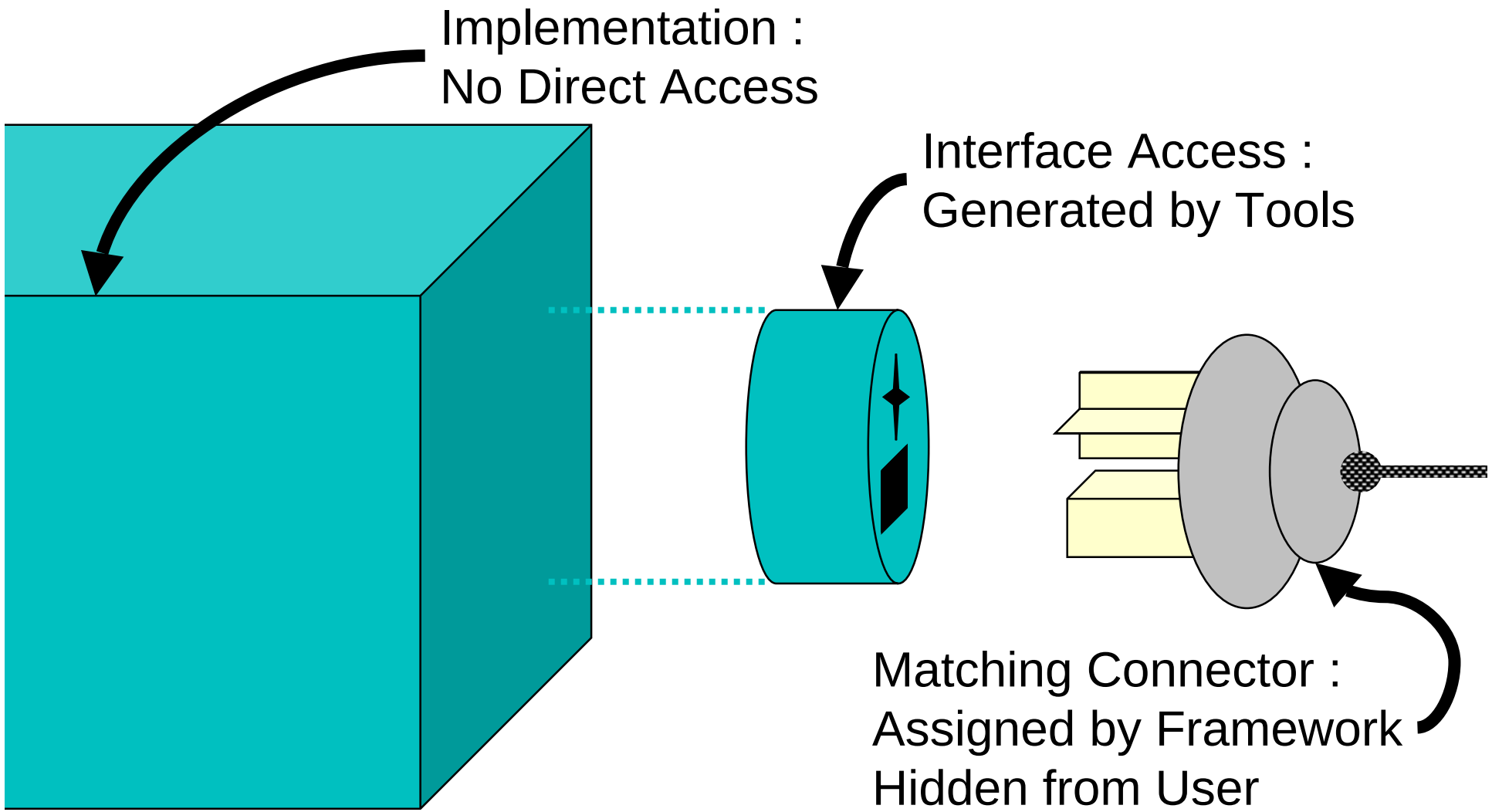


- **Interoperability across multiple languages**
- **Interoperability across multiple platforms**
- **Incremental evolution of large legacy systems (esp. w/ multiple 3rd party software)**

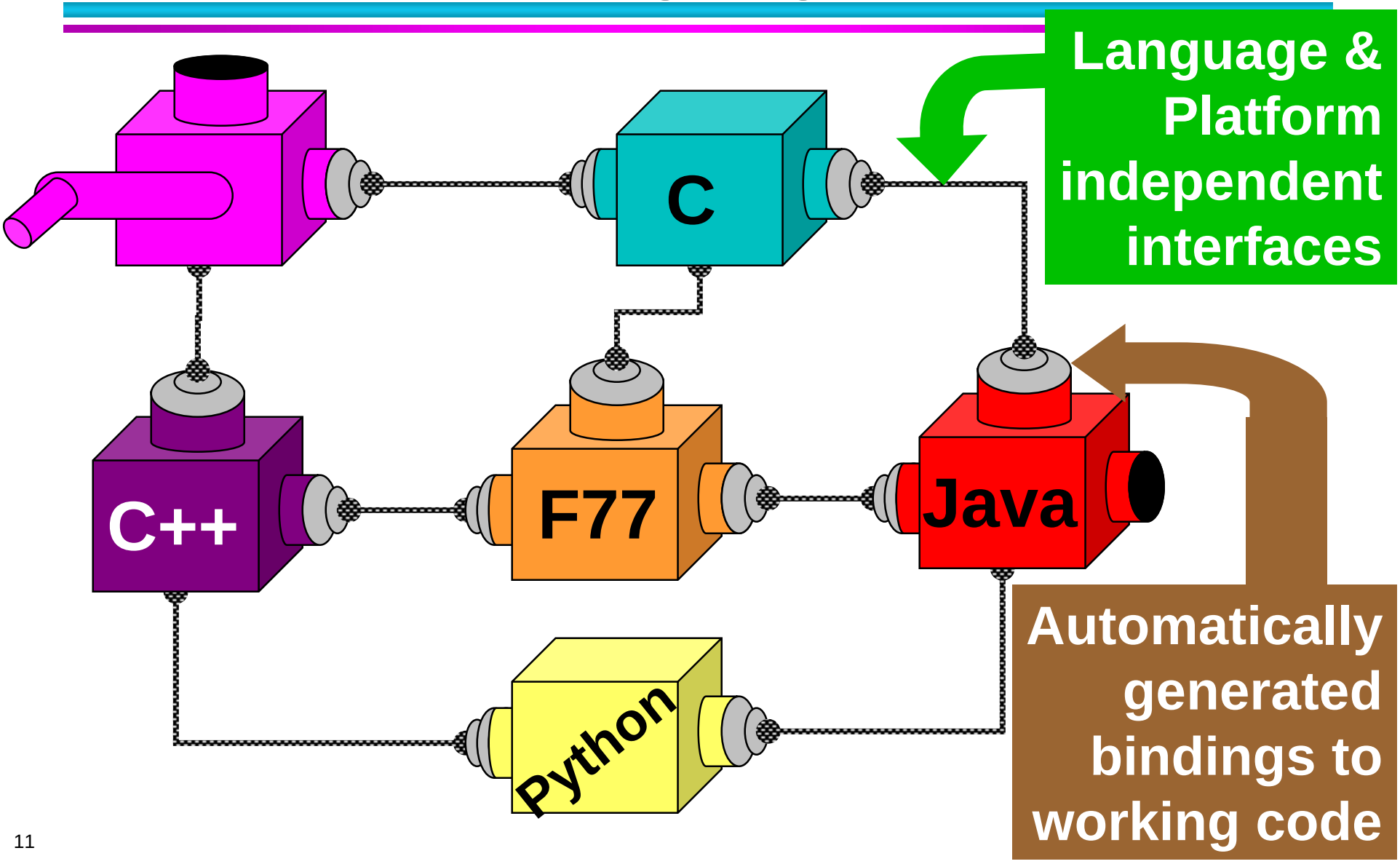
Component Technology addresses these problems



So what's a component ???

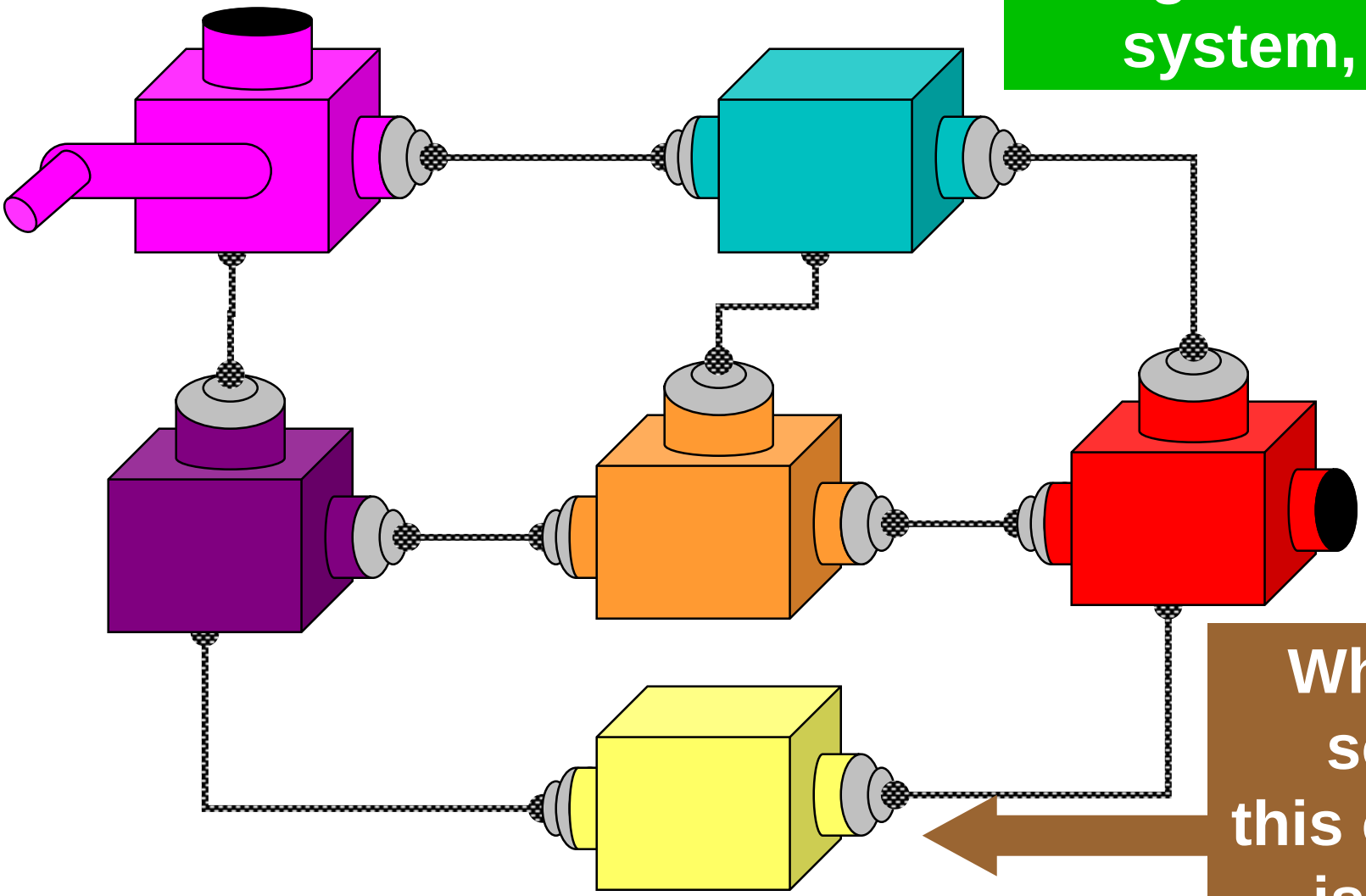


1. Interoperability across multiple languages



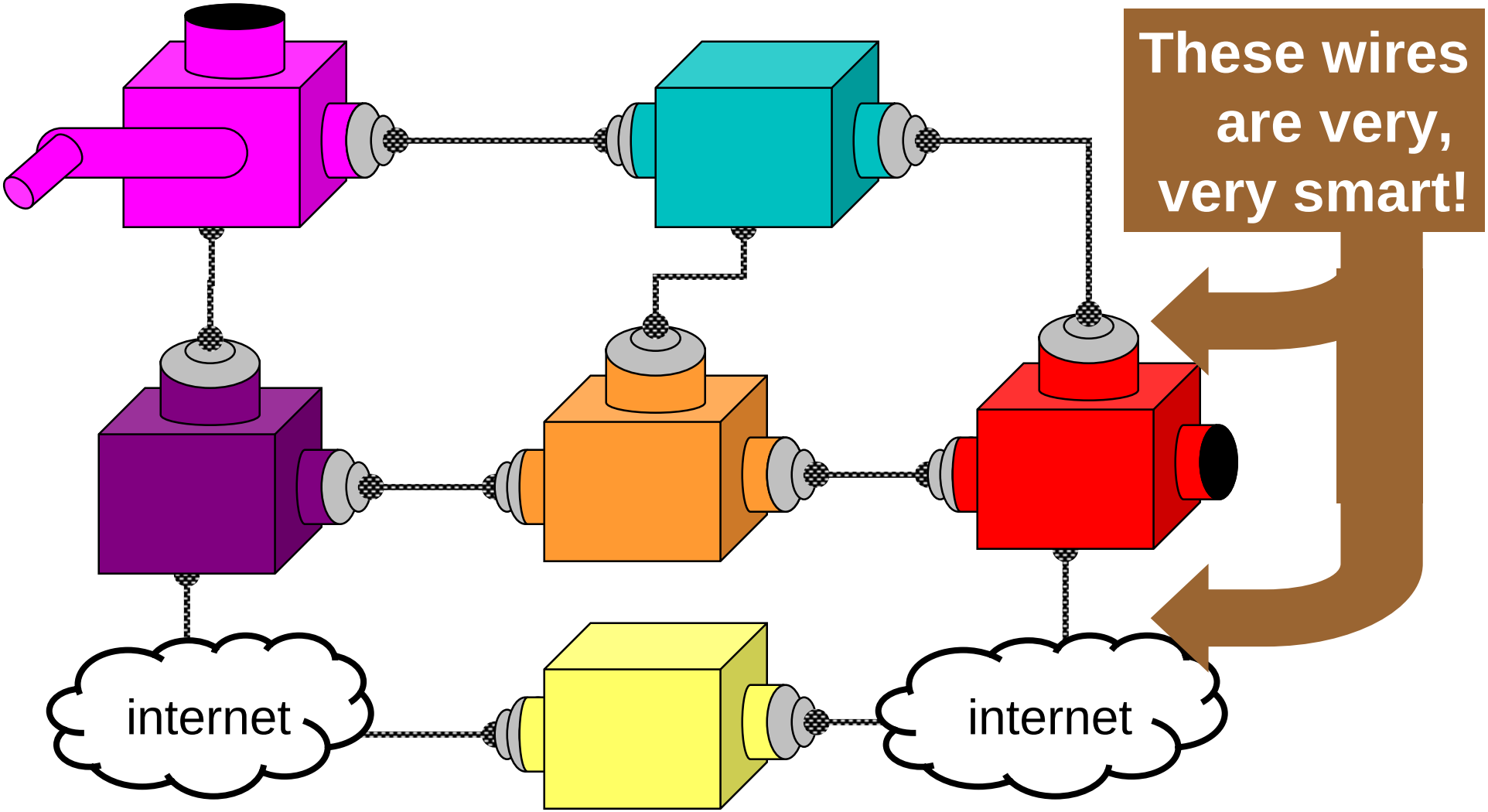
2. Interoperability Across Multiple Platforms

Imagine a company migrates to a new system, OS, etc.

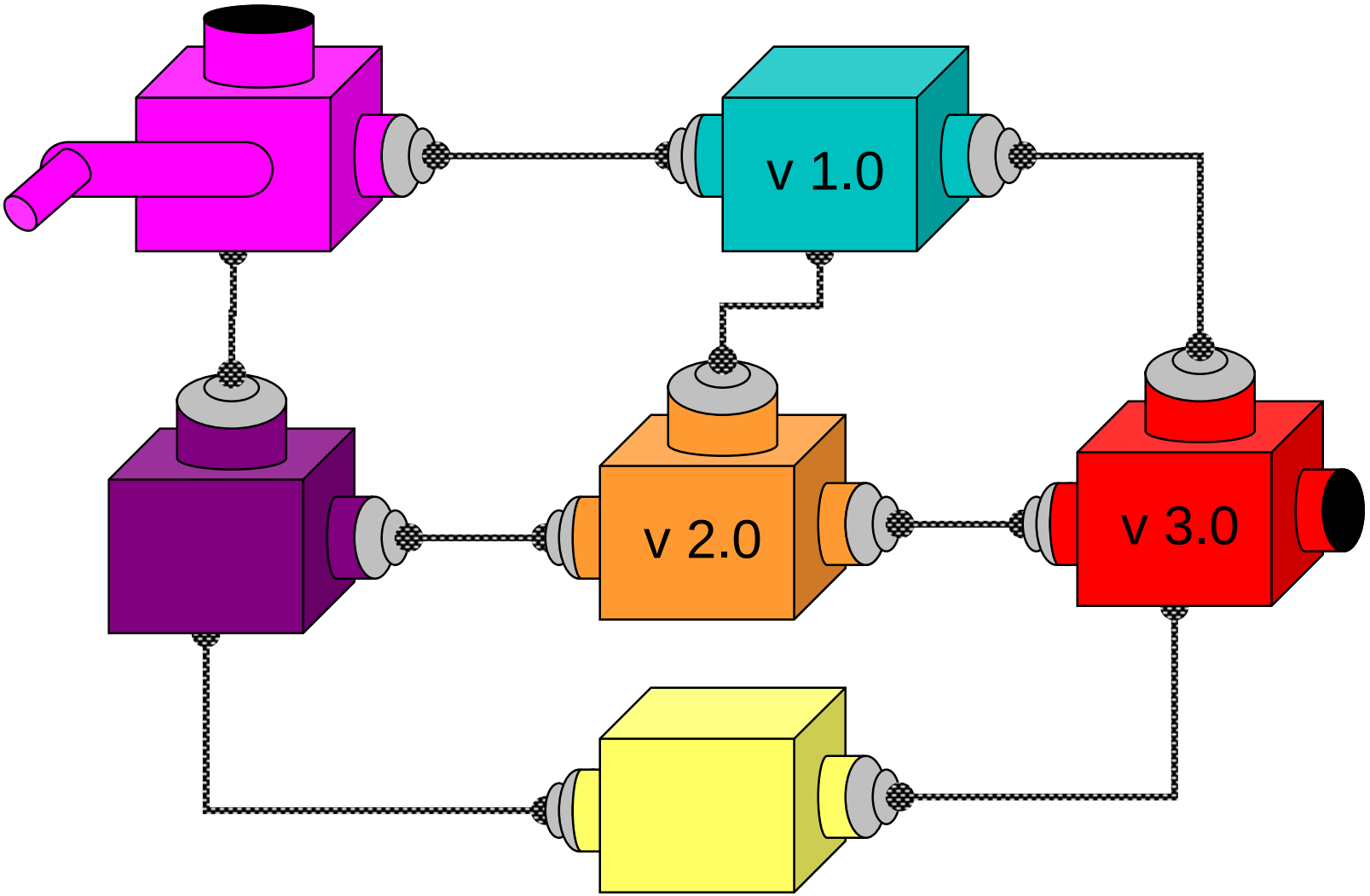


What if the source to this one part is lost???

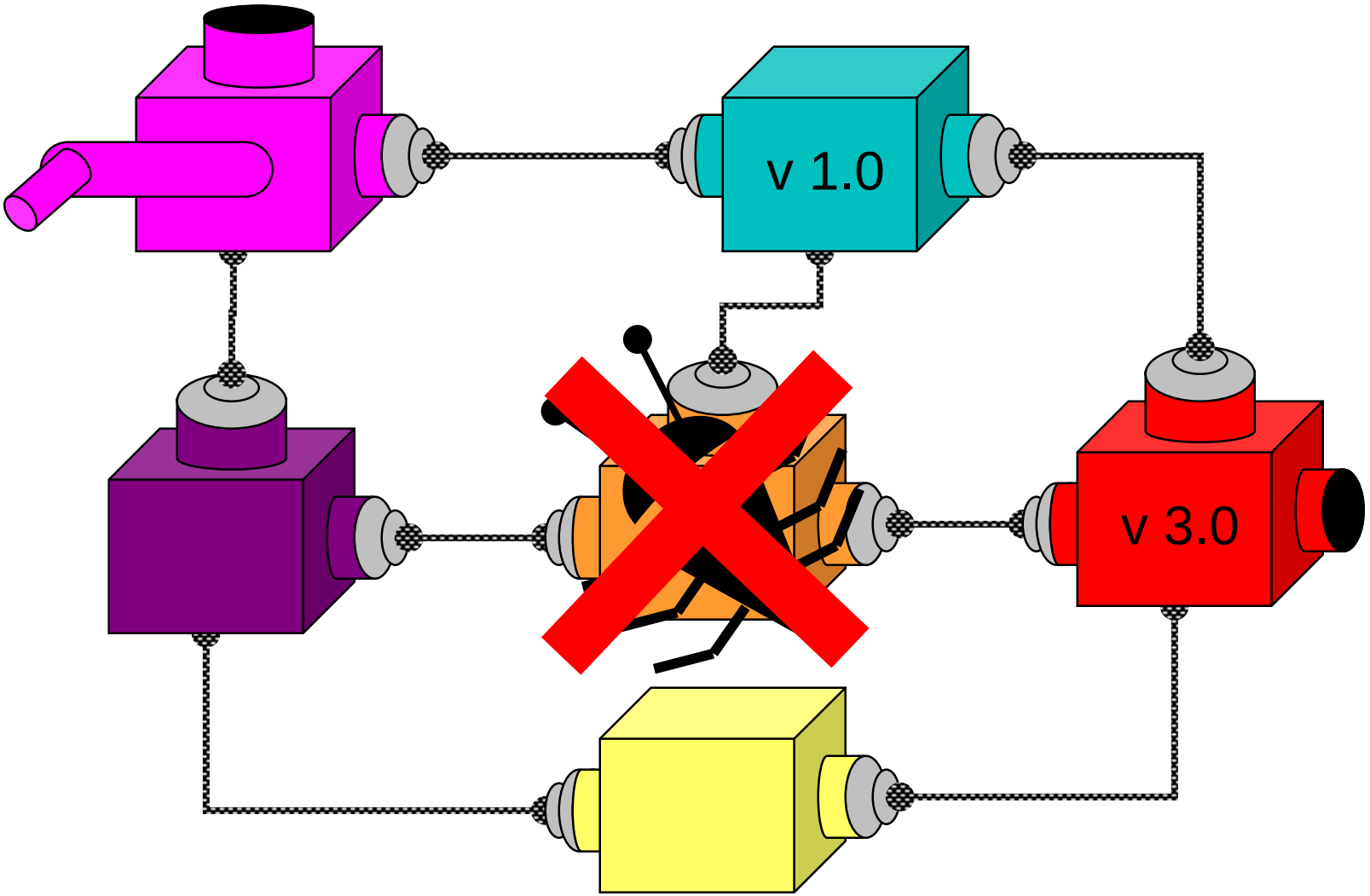
Transparent Distributed Computing



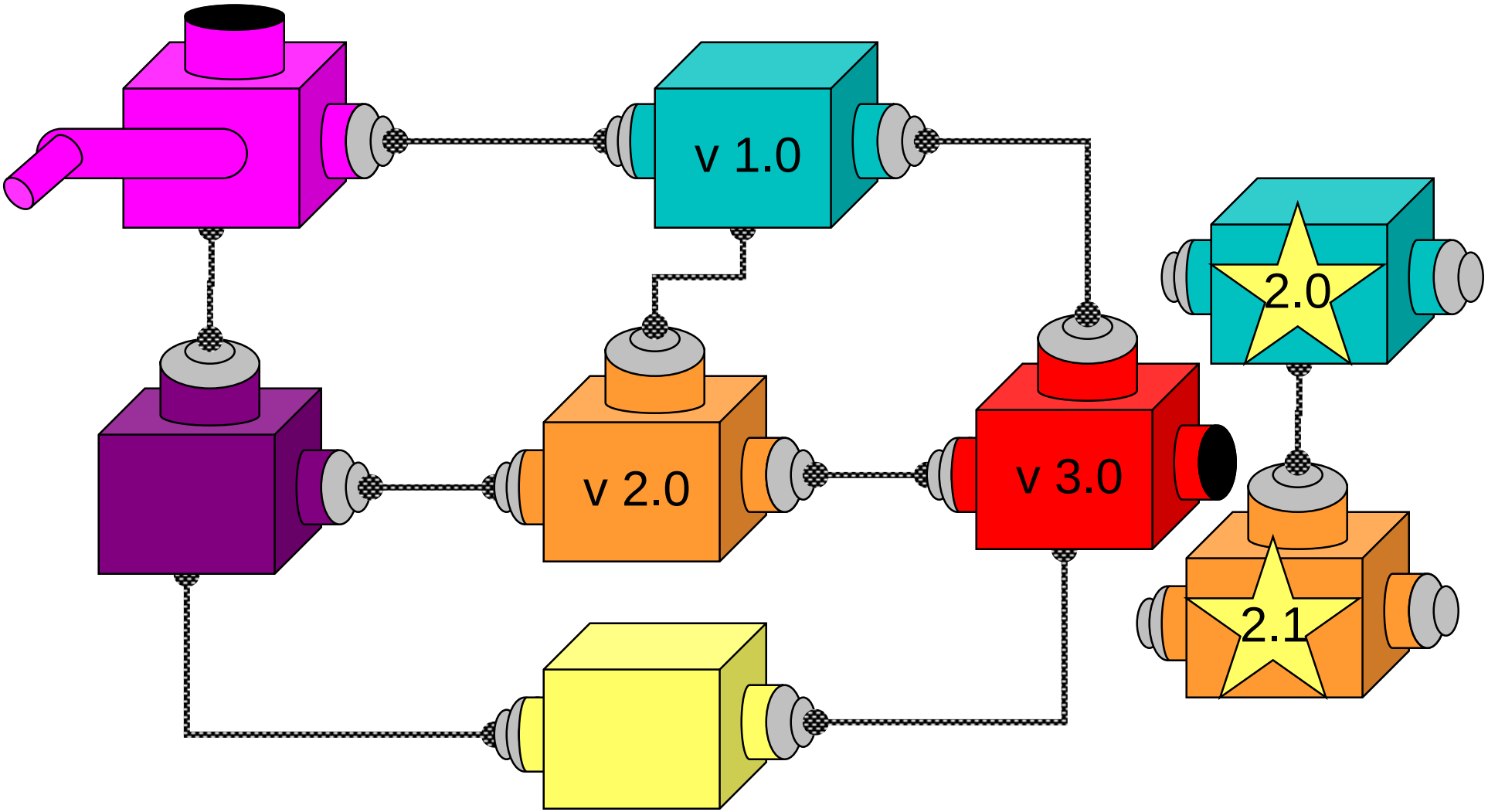
3. Incremental Evolution With Multiple 3rd party software



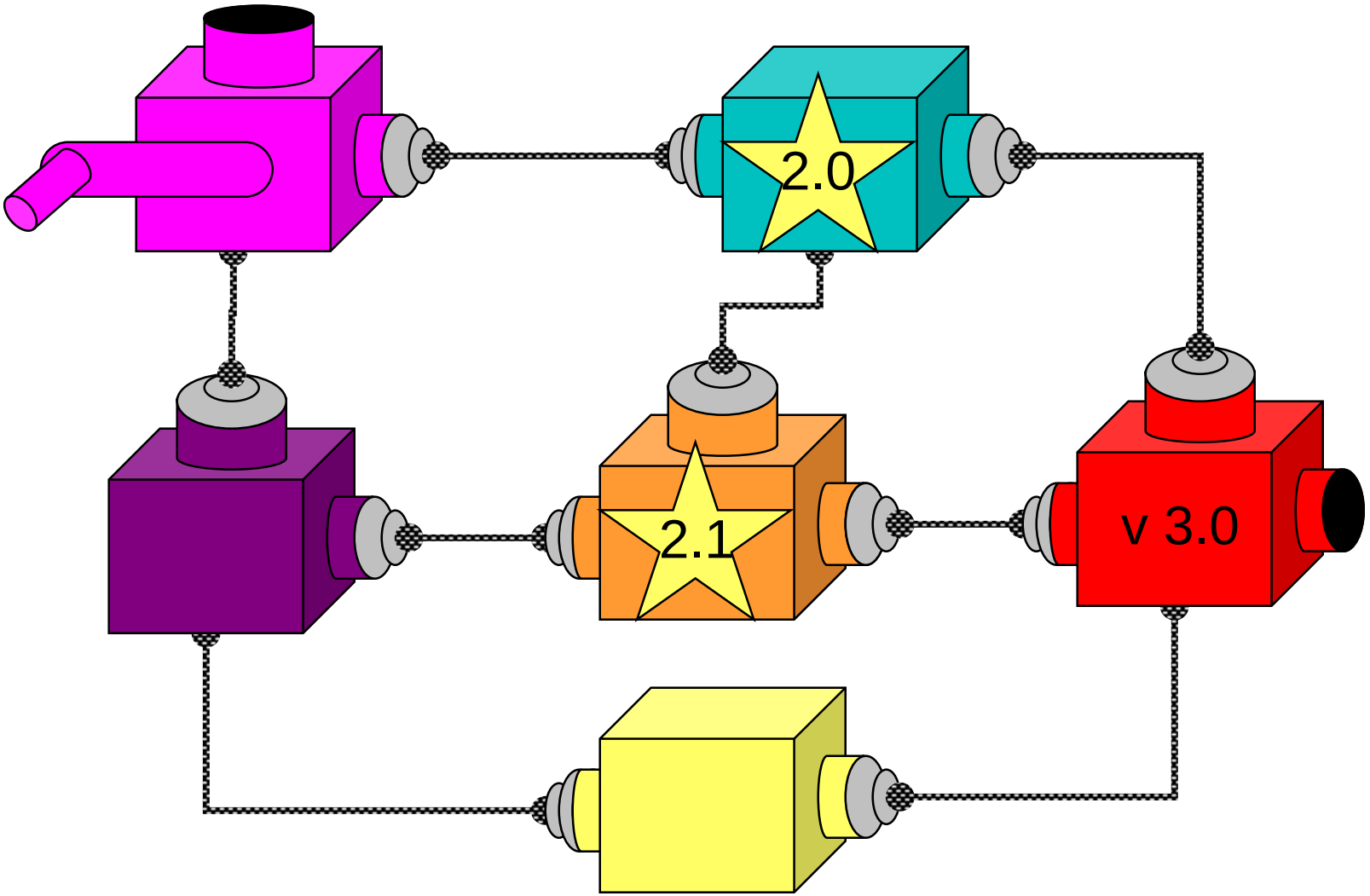
Now suppose you find this bug...



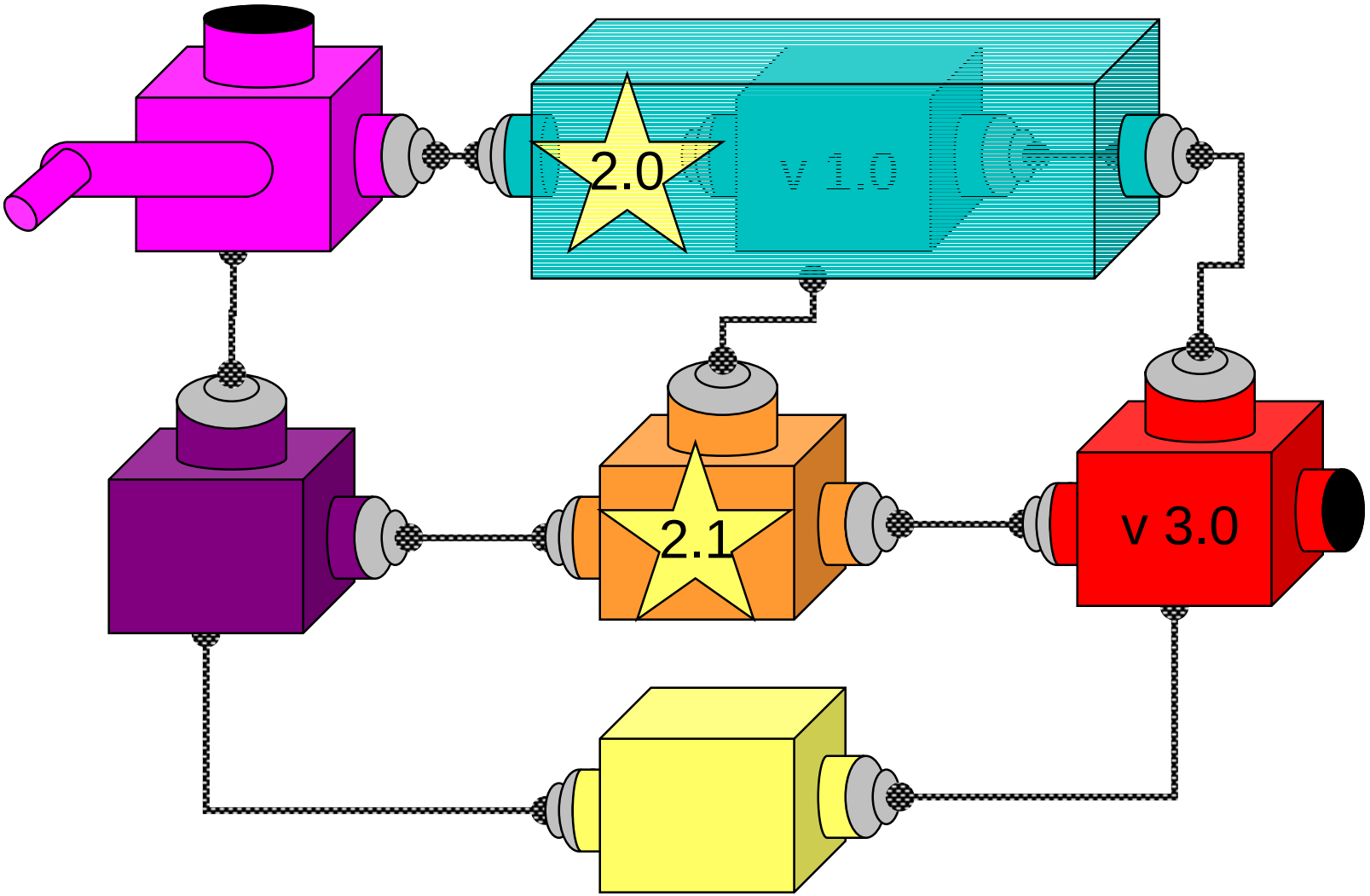
Good news: an upgrade available
Bad news: there's a dependency



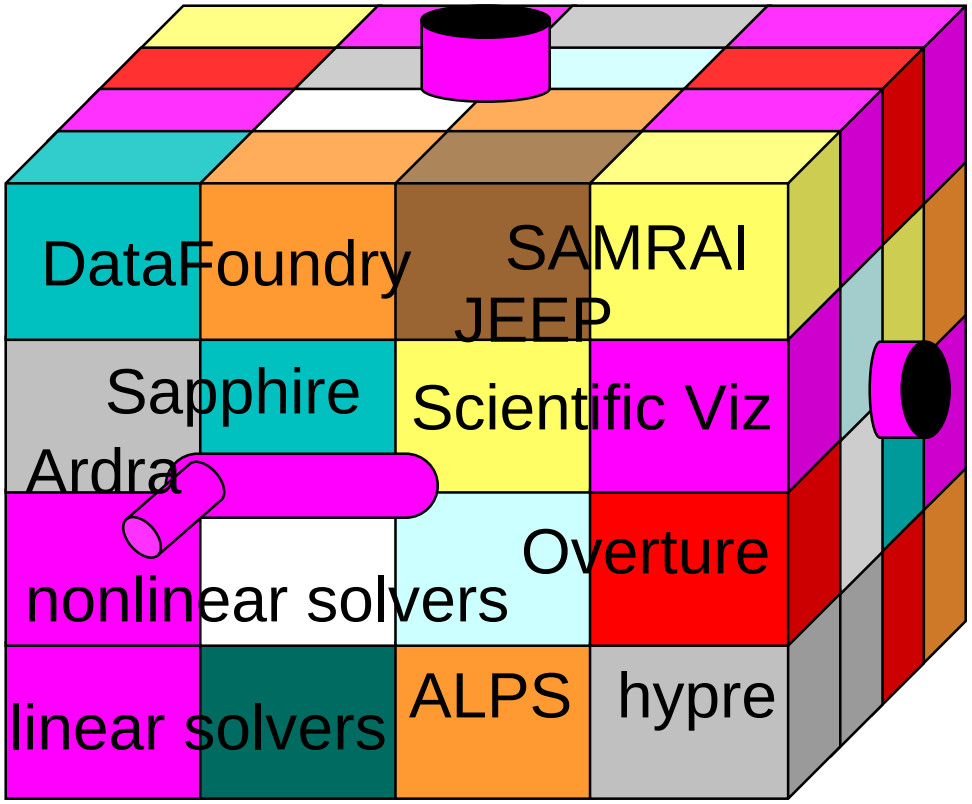
Great News:
Solvable with Components



Great News:
Solvable with Components



Why Components for Scientific Computing → Complexity



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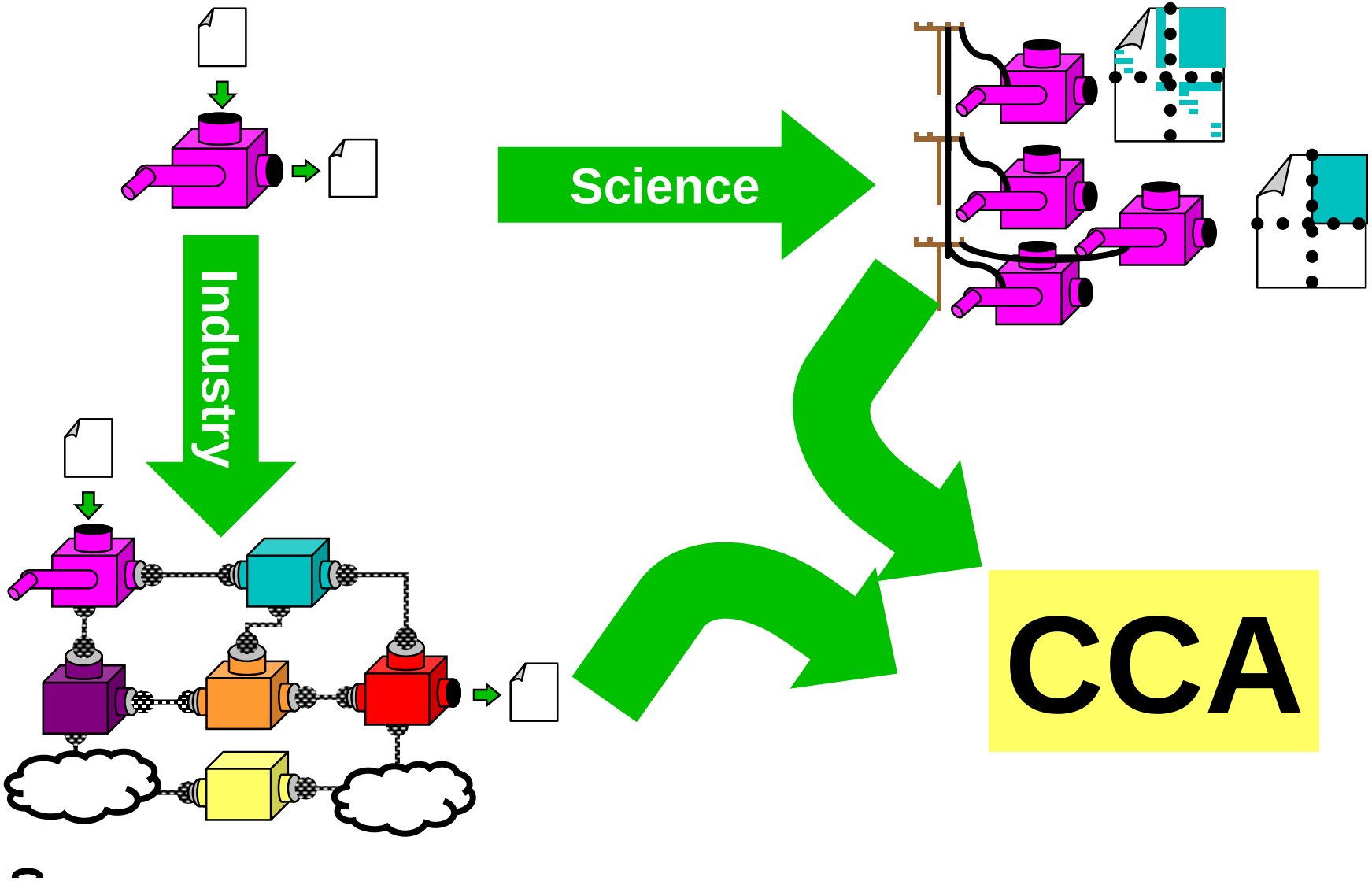
The Model for Scientific Component Programming



The End